

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A transmitter comprising:

a carrier wave generation means for generating a carrier wave possessing a predetermined frequency;

a baseband pulse generation means for generating baseband pulses at time intervals equal to a fraction $1/n$ of said predetermined frequency (n is an integer); and

a modulation means for modulating said baseband pulses with said carrier wave and generating an n cycle pulse.

Claim 2 (Currently Amended): A transmitter comprising:

a baseband pulse generation means for generating baseband pulses with a pulse width equal to a rectangular wave pulse length that is an integer multiple of one cycle of ~~a~~ the predetermined frequency carrier wave; and

a modulation means for modulating said baseband pulses with said carrier wave and generating an n cycle pulse with a number of cycles n equal to the integer multiple.

Claim 3 (Original): A transmitter according to claim 1 or 2, wherein said carrier wave generation means generates a carrier wave possessing a frequency set in the center of the transmission band.

Claim 4 (Original): A transmitter according to claim 1 or 2, wherein said carrier wave generation means generates a carrier wave possessing a frequency set in the center of a band not interfering with communication systems already in use.

Claim 5 (Original): A transmitter according to claim 1 or 2, wherein said modulation means converts the frequency of said baseband pulses by using said carrier wave.

Claim 6 (Currently Amended): A transmission method comprising the steps of:
generating a carrier wave possessing a predetermined frequency; and
generating baseband pulses at time intervals equal to a fraction $1/n$ of said frequency
(n is an integer); and
modulating said baseband pulses by using said carrier wave; and
generating and transmitting an n cycle pulse.

Claim 7 (Currently Amended): A transmission method comprising the steps of:
generating rectangular wave pulses, as baseband pulses, with a length that is an integer multiple of a said predetermined carrier wave frequency; and
modulating said baseband pulses by using said carrier wave; and
generating and transmitting an n cycle pulse with a number of cycles n equal to the integer multiple.

Claim 8 (Currently Amended): A receiver for receiving a signal transmitted on a carrier wave having a frequency set in a the center of a the transmission band and obtained by using said carrier wave to modulate the baseband pulses generated at time intervals equal to a fraction $1/n$ of said carrier wave (n is an integer), the receiver comprising: wherein
a detector configured to detect a baseband pulse train of n cycles is detected by quadrature detection using a carrier wave with a the same frequency as during transmission.

Claim 9 (Currently Amended): A receiver according to claim 8, wherein said transmitted signal contains a predetermined training signal, the time intervals between said baseband pulses are divided into equal durations at least shorter than ~~a~~ the pulse width, said detector is configured to repeatedly perform an analog/digital conversion sequence is ~~repeatedly performed~~ multiple times on said baseband pulses that are quadrature-detected at all divided positions in the pulse time interval, and the detector is configured to estimate pulse position ~~is estimated~~ based on ~~the~~ amplitude values.

Claim 10 (Currently Amended): A receiver according to claim 9, wherein said detector is configured to integrate amplitude energy values are integrated and to determine as a pulse position ~~a~~ the point where an the integrated value becomes large within ~~a~~ the time interval between pulses ~~is determined as the pulse position~~.

Claim 11 (Currently Amended): A receiver according to claim 10, wherein ~~a~~ said preamble section of said transmitted signal contains a periodic pattern of the time required to perform analog/digital conversion at all the positions, and the detector is configured to sum I and Q values detected by quadrature detection ~~are summed~~ in a manner similar to complex numbers, and to determine as a pulse position ~~a~~ the point where an the energy value of ~~a~~ the summed value becomes large is determined as ~~a~~ the pulse position.

Claim 12 (Currently Amended): A receiver according to claim 11, wherein said detector is configured to detect ~~a~~ periodic pattern phase ~~is detected~~ and to estimate transmission path status ~~is estimated~~ by eliminating the effects of ~~a~~ said pattern from the data summed in a manner similar to complex numbers.

Claim 13 (Currently Amended): A receiver according to claim 8, wherein said detector is configured to correct or track pulse position ~~is corrected or tracked~~ by detecting a the phase shift of said carrier wave, and to determine a as well as the point where a the received energy is high ~~is determined as a~~ the pulse position.

Claim 14 (Currently Amended): A receiver according to claim 13, wherein said detector is configured to track pulse position ~~is tracked~~ by digital processing when the analog/digital conversion speed is sufficiently high.

Claim 15 (Currently Amended): A receiver according to claim 14, wherein the detector is configured to convert phase of the information bit phase ~~is converted~~ by analog operations such as addition/subtraction and inversion of I and Q, and to evaluate a the result ~~is then evaluated~~ to select the phase having an optimal phase shift.

Claim 16 (Currently Amended): A receiving method for receiving a the transmitted signal comprised of n $[[N]]$ cycle pulses obtained by carrier-modulating a said baseband pulses generated at time intervals equal to a fraction $1/n$ (n is an integer) of a said carrier wave with a frequency set in the center of the transmission band, said method comprising:
detecting wherein a baseband pulse train of n cycle pulses is detected by quadrature detection using a carrier wave with a the same frequency as during transmission; and
extracting data from said pulse train detected in said detecting.

Claim 17 (Currently Amended): A transmitter according to claim 1, further comprising: containing

a spread code generator module for generating spread codes for direct spectrum spread.

Claim 18 (Currently Amended): A receiver according to claim 8, further comprising:
containing

a spread code generator module for generating spread codes for direct spectrum spread.

Claim 19 (Currently Amended): A pulse detection method for detecting the pulse position of a signal transmitted on a carrier wave with a frequency set in the center of the transmission band and obtained by carrier-modulating said baseband pulses generated at time intervals equal to a fraction $1/n$ of said carrier wave (n is an integer), and said transmitted signal contains a predetermined training signal, said method comprising:

dividing ~~wherein~~ the time intervals between pulses ~~are divided~~ into equal durations at least shorter than the pulse width,

repeatedly performing an analog/digital conversion sequence ~~is repeatedly performed~~ multiple times on said baseband pulses that are quadrature-detected at all divided positions, and

estimating said pulse position ~~is estimated~~ based on the amplitude values.

Claim 20 (Currently Amended): A pulse detection method according to claim 19, ~~wherein~~ further comprising:

integrating said amplitude energy values; ~~are integrated~~ and

determining ~~a~~ the point where the integrated value is a maximum within the time interval between pulses ~~is determined~~ as ~~a~~ the pulse position.

Claim 21 (Currently Amended): A pulse detection method according to claim 20,
further comprising:

summing I and Q values detected by quadrature detection in a manner similar to
complex numbers, and

determining a point where an energy value of a summed value becomes large as a
pulse position,

wherein said preamble section of said transmitted signal contains a periodic pattern of
the time required to perform analog/digital conversion at all the positions, ~~and the I and Q
values detected by quadrature detection are summed in a manner similar to complex numbers,
and the point where the energy value of the summed value becomes large is determined as the
pulse position.~~

Claim 22 (Currently Amended): A tracking method for tracking a signal transmitted
on a carrier wave with a frequency set in the center of the transmission band and obtained by
carrier-modulating a said baseband pulses generated at time intervals equal to a fraction $1/n$
of said carrier wave (n is an integer), the method comprising:

correcting or tracking a wherein said pulse position is ~~corrected or tracked by~~
detecting a the phase shift of said carrier wave; [[,]] and

determining a as well as the point where the received energy is high is ~~determined as a~~
the pulse position.

Claim 23 (Currently Amended): A tracking method according to claim 22, wherein
said tracking includes tracking pulse position is ~~tracked~~ by digital processing when the A/D
conversion speed is sufficiently high.

Claim 24 (New): A transmitter comprising:

a carrier wave generator configured to generate a carrier wave possessing a predetermined frequency;

a baseband pulse generator configured to generate baseband pulses at time intervals equal to a fraction $1/n$ of said predetermined frequency (n is an integer); and

a modulator configured to modulate said baseband pulses with said carrier wave and to create an n cycle pulse.

Claim 25 (New): A transmitter comprising:

a baseband pulse generator configured to generate baseband pulses with a pulse width equal to a rectangular wave pulse length that is an integer multiple of one cycle of a predetermined frequency carrier wave; and

a modulator configured to modulate said baseband pulses with said carrier wave and to create an n cycle pulse with a number of cycles n equal to the integer multiple.